

Name:

Date:

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PART A In the space on the left, write the letter of the term or phrase which **best** completes the statement or answers the question (1 mark each).

- _____ 1. Which of the following is a multivalent metal?
- a. Ca
 - b. Mg
 - c. Na
 - d. Fe
- _____ 2. Sodium nitride contains _____ sodium ions.
- a. 1
 - b. 2
 - c. 3
 - d. 4
- _____ 3. Which of the following elements does not form a diatomic molecule?
- a. Hydrogen
 - b. Carbon
 - c. Nitrogen
 - d. Iodine
- _____ 4. Nitrogen contains _____ valence electrons.
- a. 1
 - b. 3
 - c. 5
 - d. 7
- _____ 5. The atomic number of a neutral atom equals ...
- a. The number of protons.
 - b. The number of electrons.
 - c. Both A and B.
 - d. Neither A nor B.
- _____ 6. Tetraphosphorus heptaoxide as the following chemical formula:
- a. P_3O_8
 - b. P_4O_7
 - c. P_5O_8
 - d. P_4O_{10}

- ___ 7. Which of the following is a polyatomic ion?
- a. Cl^-
 - b. P^{3-}
 - c. OH^-
 - d. S^{2-}
- ___ 8. Which of the following is a chemical property?
- a. density
 - b. reactivity with oxygen
 - c. colour
 - d. melting point
- ___ 9. When two substances are combined, but not chemically, they form a ...
- a. mixture
 - b. pure substance
 - c. compound
 - d. element
- ___ 10. ___ are found outside the nucleus.
- a. Protons.
 - b. Neutrons.
 - c. Electrons.
 - d. Protons and neutrons.

PART B In the space provided mark each of the following as true or false. (1 mark each)

- ___ 1. Columns on the periodic table are called periods.
- ___ 2. Neutrons have no charge.
- ___ 3. The mass number is the total amount of protons and neutrons in an element.
- ___ 4. Ammonium is a negatively charged polyatomic ion.
- ___ 5. There are three types of subatomic particles.
- ___ 6. Sodium is a multivalent metal.
- ___ 7. Halogens are highly reactive non-metals.
- ___ 8. Electrons and protons have the same mass.
- ___ 9. Valence electrons are the electrons found in the innermost shell.
- ___ 10. The chemical formula for gold (III) chloride is Au_3Cl .

PART C In the space provided, match each term or phrase with the best definition. (1 mark each)

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|---------------------------|---|
| ___ 1. Ionic compound | A. A pair of atoms of the same element joined by a covalent bond. |
| ___ 2. Neutron | B. Used to describe an element that can form two or more charges. |
| ___ 3. Electron | C. Compounds composed of positive ions and negative ions. |
| ___ 4. Diatomic molecule | D. Unreactive, colourless elements. |
| ___ 5. Valence electrons | E. Is located in the nucleus and has no charge. |
| ___ 6. Molecular compound | F. React with water to form hydrogen. |
| ___ 7. Noble gases | G. Is located in the nucleus and has a positive charge. |
| ___ 8. Proton | H. Orbit outside the nucleus and have a negative charge. |
| ___ 9. Alkali metals | I. Formed when nonmetallic atoms share electrons in a bond. |
| ___ 10. Multivalent | J. The electrons in the outermost shell of an atom or ion. |

PART D Each of the following questions requires a short answer.

1. Draw a Bohr diagram for each of the following. (1 mark each)

Oxygen

HF

2. List two properties of halogens. (2 marks)

3. Write the names of the following compounds. (1 mark each)

a. KCl =

b. AuBr_3 =

c. $(\text{NH}_4)_2\text{O}$ =

d. P_2O_5 =

e. $\text{Fe}_2(\text{SO}_4)_3$ =

f. N_2O =

g. KCH_3COO =

h. Mg_3N_2 =

4. Write the chemical formula for the following ionic compounds. (1 mark each)

a. sodium sulphide =

b. carbon tetrafluoride =

c. iron (III) oxide =

d. ammonium phosphate =

e. barium hydroxide =

f. nitrogen pentachloride =

g. niobium (V) iodide =

h. cobalt (III) dichromate =